

Fioroni Turbo and Twin Turbo Sliding Clutches Explained

The Fioroni Turbo and Twin Turbo Sliding Clutches are the most advanced, best performing, and longest lasting clutches on the market. They were first specifically designed for high performance 1/8th buggies, and are an excellent upgrade to virtually all nitro truggies and monster trucks. We hope the following answers all the common questions regarding the fit, assembly, performance, maintenance, and upgrade of these clutches.

What you will need:

First off, you will need to purchase 2 bags- one with the flywheel and nut and one with the clutch shoes, springs, and shim. You will always use the collet and crankshaft screw supplied with your engine, and you will need to supply your own bearings and clutchbell. Virtually any 1/8th or original kit clutchbell will fit; we suggest using any of Fioroni's clutch bells ranging from 13 to 17 teeth (OT-FR13, 14, 15, 16, 17)

Second, you will need the clutch shoes. There are 2 types of clutch shoes, each available in different compounds. The first is the original Turbo Sliding Clutch, the second is the Twin Turbo Sliding Clutch. Both operate on the same principle, and both have their advantages. The Turbo Sliding Clutch is made up of 2 'thick' shoes. This setup works excellent in buggies, and offers extremely long lasting shoes. Assembly and installation is very simple and quick. The Twin Turbo Sliding Clutch is made up of 4 shoes- two shoes are thinner and two shoes are slightly thicker. The overall thickness of the assembled shoes is the same as the standard Turbo Sliding Clutch. This setup works excellent in buggies and is better suited for heavier vehicles such as truggies compared to the standard Turbo Sliding Clutch. Assembly and installation is minimally more time consuming. The feedback we have received and our own testing both point out that either Sliding Clutch outlast all other clutch units on the market.

Parts:

Flywheel: There are 2 flywheels to choose from, both include the fixing nut.

OT-FR50- Universal fit flywheel; this will fit most non Kyosho and non GS 'Pro' buggies, trucks, and truggies including X-Ray, Jammin, Mugen, Losi, HPI, etc.

OT-FR51- Fits Kyosho/Kyosho compatible and GS 'Pro' kits. This flywheel has an offset which places clutch shoes further away from the engine.

Turbo Sliding Clutch Shoes: There are 2 compounds to choose from; both include 3 standard springs and a large shim. This clutch has a large surface area, which provides excellent and consistent power, particularly for buggies.

OT-FR52- Black/Carbon shoes: These shoes offer max punch and the least maintenance. Most racers say they run a set for an entire season or longer.

OT-FR53- White/Teflon shoes: These shoes allow slip, good for loose tracks. They require periodical cleaning (they glaze over time), but last even longer than black/carbon shoes.

Twin Turbo Sliding Clutch Shoes: There are 3 compounds to choose from; all include 3 standard springs and a large shim. This clutch uses 2 thin and 2 thick shoes. Since the weight of the 2 pairs of shoes varies, they engage at different rpm's, which providing more consistent action over longer runs, particularly for truggies/trucks.

OT-FR56- Black/Carbon shoes: Same characteristics as OT-FR52, but better suited for trucks/truggies.

OT-FR57- Red/Leather shoes: These shoes are 'in between' the black and white shoes.

OT-FR58- White/Teflon shoes: Same characteristics as OT-FR53, but better suited for trucks/truggies.

Spares/Options:

OT-FR35- Replacement flywheel nut

OT-FR36- Replacement standard clutch springs

OT-FR55- Replacement large shims

OT-FR59- Optional stiff clutch springs

Installation:

Install flywheel using original collet and supplied flywheel nut. Tighten as normal.

Turbo Shoe Installation:

Loop ends of springs together. Slide spring into deep groove of one of the shoes. Be sure to slide or push the springs in, do not 'roll' them in. Make sure spring is fully seated in deep groove, and repeat with other shoe. Flip over and repeat with next spring (shallow groove side). Flip over and repeat with last spring (deep groove side). Slide finished assembly onto flywheel. Slide supplied shim over crankshaft, flange side out. You do not have to use the shim, some people use it, some don't. Install bearings and clutch bell as normal with about 0.5mm endplay.

Twin Turbo Shoe Installation:

Loop ends of springs together. Slide spring into one of the thin shoes. Be sure to slide or push the springs in, do not 'roll' them in. Make sure spring is fully seated in groove, and repeat with other thin shoe. Install thin shoes into flywheel, springs facing down. Install 1 or 2 springs in thick shoes, again, do not 'roll' them in. Install thick shoes into flywheel, springs facing up. Slide supplied shim over crankshaft, flange side out. You do not have to use the shim, some people use it, some don't. Install bearings and clutch bell as normal with about 0.5mm endplay.

Adjustments:

There are many adjustments you can make with both the types of clutches. As you can see above, there is an optional stiff spring set, and as you can read above, the different compound shoes offer various type of performance. With the Turbo Sliding Clutch, the most common adjustment is to swap one or more of the stock springs with the stiffer springs. You can also try running one black and one white shoe, which may be a good compromise between running all black or all white, especially over long runs on a track which starts out with lots of grip and ends up dusty and loose. This is not something we have tried ourselves as of yet...

With the Twin Turbo clutch, you have a wider choice of adjustments. For example, if you are running the black shoes and you want a bit more punch, install a stiff spring in the thin shoes. For a super smooth clutch and consistent clutch, try mixing a set of thin black shoes with a set of thick white shoes, or vice versa. You can also try mixing one thin black with one thin white along with one thick black shoe and one thick white shoe. For truggies a black/white combination with 1 stiff spring in the thin shoes might actually be favorable.

Some racers have experimented with lightening the shoes and/or shortening the springs. We have not tried either, so attempt at your own risk.

Maintenance:

There is very little maintenance required for this clutch. You may even find that your clutch bell bearings last longer. If you follow proper cleaning and care of your car, a visual inspection and basic cleaning of the shoes and springs is usually all you will need to do. When you have your car apart, check to make sure the springs are in place. If you push, not roll, the springs into the shoes, they will stay there. If you run the white shoes, you might find they glaze over after a weekend of use. Remove the glaze with a piece of scotch brite or similar material. Some racers report that the hole in the brass shim ovals out after time. This is not common to all, so keep an eye out for that too. If you eventually notice a loss or change in performance, it's time to replace the springs. Depending on how often and how hard you run your car, the springs can last up to a full season. Generally speaking, the shoes will outlast the springs. Hope this helps, good luck racing!